

REMARKS/ARGUMENTS

In the December 14, 2005 Office Action, the Examiner rejected claims 1-9 and objected to claims 10 and 11 pending in the application. This response cancels claim 2, without prejudice of disclaimer, amends claims 1, 5, and 6, and presents new claims 15-24 for consideration. After entry of the foregoing amendments, claims 1 and 3-24 (4 independent claims; 23 total claims) remain pending in the application. Reconsideration is respectfully requested.

Claims 1, 2, 4, 6, and 8 stand rejected under 35 U.S.C. §102(b) as being anticipated by Liu et al., U.S. Patent No. 5,720,845 (hereafter "Liu"). In particular, the Examiner states that Liu discloses a workpiece carrier comprising a carrier housing, a workpiece bladder coupled to the housing, the workpiece bladder having a surface configured to press against a surface of a workpiece, and at least one pressure transducer (29) mounted to the carrier housing for controlling pressure provided to the workpiece bladder. With respect to claims 2 and 6, the Examiner states that the bladder includes a plurality of pressurizable zones and each zone has a pressure transducer for monitoring the pressure to that zone as clearly shown in Figure 3. Finally, the Examiner states that Liu further discloses a workpiece carrier that includes a control board mounted to the carrier (see column 4, lines 8-13). Applicants respectfully traverse this rejection.

Liu generally discloses a polishing head for polishing a semiconductor wafer and for providing endpoint detection during chemical-mechanical polishing. The head includes an arrangement of patterned active actuators and load cells located above the wafer to fully control the wafer surface profile changes and provide endpoint detection during the polishing processes. Each active actuator applies pressure according to the local coated thin film thickness on the wafer and relative velocity between the wafer and polishing pad. However, contrary to the Examiner's assertion, Liu fails to disclose a bladder having a plurality of pressurizable zones each having a pressure transducer for monitoring the pressure to each zone. Instead, Liu discloses a hexagonal attachment plate 36 which has 61 hexagonal attachments, each associated with an actuator (see column 4, lines 45-54). Furthermore, Applicants have amended independent claims 1 and 6 to include a plurality of annular shaped pressurizable zones. This limitation is clearly not found in the Liu patent reference.

Claims 1, 2, 6 and 8 stand rejected under 35 U.S.C. §102(e) as being anticipated by Berman et al., U.S. Patent Application Publication No. 2003/0211811 A1, (hereinafter "Berman"). In particular, the Examiner states that Berman discloses a workpiece carrier including inherently a carrier housing, a workpiece bladder (14) coupled to the housing where the workpiece bladder has a surface configured to press against a surface of a workpiece, and at least one pressure transducer (20) mounted to the carrier housing for controlling pressure provided to the workpiece bladder. The Examiner also contends that Berman discloses a bladder comprising a plurality of pressurizable zones where each zone has a pressure transducer for monitoring a pressure to that zone. Applicants respectfully traverse this rejection.

Applicants' amended independent claims 1 and 6 each require a plurality of annular shaped pressurizable zones that are individually controlled. In contrast, Berman discloses non-annular pressure zones that are controlled with individual pressure transducers (see paragraphs 9 and 11). Accordingly, in that Berman fails to disclose each and every element of Applicants' claims, Berman cannot anticipate Applicants' claims.

Claims 5 and 7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Liu or Berman each considered independently, in view of Zias et al., U.S. Patent No. 4,051,712 (hereinafter "Zias"). In particular, the Examiner states that although neither Liu or Berman disclose an automatic calibration system for calibrating pressure transducers, Zias discloses that it is well known in the art to automatically calibrate a pressure transducer in order to maintain a desired pressure level. Accordingly, the Examiner contends that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified both the Liu and Berman apparatuses by providing an automatic calibration system for automatically calibrating the pressure transducers as taught by Zias in order to maintain desired pressure levels. Claims 3 and 9 also stand rejected under 35 U.S.C. §103(a) as being unpatentable over Liu in view of Muller et al., U.S. Patent No. 5,980,361 (hereinafter "Muller"). In particular, the Examiner states that although Liu does not disclose at least one valve for controlling the pressure of the system, Muller discloses control valves for independently operating pressure chambers in a workpiece carrier. Therefore, the Examiner contends that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Liu apparatus by

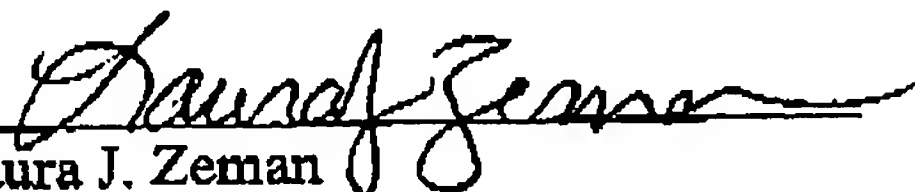
providing control valves for independently operating each of the actuators as taught by Muller for better control of the apparatus.

Applicants' independent claims 1 and 6 (and the claims depending therefrom) each require a plurality of annular shaped pressurizable zones that are individually controlled. As previously argued above, neither Liu or Berman disclose such annular pressurizable zones. In addition, neither Zias or Muller, either alone or in combination, disclose annular shaped pressurizable zones. Accordingly, in that none of the cited references, either alone or in combination, disclose each and every element of Applicants' claims, Applicants' claims cannot be obvious in light of the cited references.

Applicants' new claims 15-24 each require a rotary union which the Examiner has previously indicated as allowable in light of the subject matter in Applicants' claims 10 and 11. Accordingly, Applicants believe new claims 15-24 to be allowable over the prior art of record.

In view of the foregoing, Applicant respectfully submits that all of the pending claims fully comply with 35 U.S.C. §112 and are allowable over the prior art of record. Reconsideration of the application and allowance of all pending claims is earnestly solicited. Should the Examiner wish to discuss any of the above in greater detail or deem that further amendments should be made to improve the form of the claims, then the Examiner is invited to telephone the undersigned at the Examiner's convenience.

Respectfully submitted,

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